

WHAT IS CLAIMED IS:

1. A refrigerant cycle apparatus in which a multistage compression type compressor constitutes a refrigerant circuit, including an electromotive element,  
5 and first and second compression elements driven by the electromotive element in an airtight container to suck a refrigerant gas having an intermediate pressure, which has been compressed by the first compression element, into the second compression element and to compress and discharge  
10 the refrigerant gas, the apparatus comprising:

a sensor for detecting a discharge refrigerant pressure of the first compression element; and a control device into which an output of the sensor is input,

wherein the control device detects reverse of the  
15 discharge refrigerant pressures of the first and second compression elements based on the discharge refrigerant pressure of the first compression element.

2. The refrigerant cycle apparatus according to  
20 claim 1, wherein the control device judges that the discharge refrigerant pressures of the first and second compression elements are reversed in a case where the discharge refrigerant pressure of the first compression element rises to a predetermined value.

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3. A refrigerant cycle apparatus in which a multistage compression type compressor constitutes a

refrigerant circuit, including an electromotive element,  
and first and second compression elements driven by the  
electromotive element in an airtight container to suck a  
refrigerant gas having an intermediate pressure, which has  
5 been compressed by the first compression element, into the  
second compression element and to compress and discharge  
the refrigerant gas, the apparatus comprising:

a temperature sensor for detecting a discharge  
refrigerant temperature of the first compression element;  
10 and a control device into which an output of the  
temperature sensor is input,

wherein the control device detects reverse of the  
discharge refrigerant pressures of the first and second  
compression elements based on the discharge refrigerant  
15 temperature of the first compression element.

4. The refrigerant cycle apparatus according to  
claim 3, wherein the control device judges that the  
discharge refrigerant pressures of the first and second  
20 compression elements are reversed in a case where the  
discharge refrigerant temperature of the first compression  
element rises to a predetermined value.

5. A refrigerant cycle apparatus in which a  
25 multistage compression type compressor constitutes a  
refrigerant circuit, including an electromotive element,  
and first and second compression elements driven by the

electromotive element in an airtight container to suck a refrigerant gas having an intermediate pressure, which has been compressed by the first compression element, into the second compression element and to compress and discharge the refrigerant gas, the apparatus comprising:

a first sensor for detecting a discharge refrigerant pressure of the first compression element; a second sensor for detecting a discharge refrigerant pressure of the second compression element; and a control device into which outputs of both the sensors are input,

wherein the control device detects reverse of the discharge refrigerant pressures of the first and second compression elements based on the discharge refrigerant pressures of the first and second compression elements.

6. A refrigerant cycle apparatus in which a multistage compression type compressor constitutes a refrigerant circuit, including an electromotive element, and first and second compression elements driven by the electromotive element in an airtight container to suck a refrigerant gas having an intermediate pressure, which has been compressed by the first compression element, into the second compression element and to compress and discharge the refrigerant gas, the apparatus comprising:

a first temperature sensor for detecting a discharge refrigerant temperature of the first compression element; a second temperature sensor for detecting a

discharge refrigerant temperature of the second compression element; and a control device into which outputs of both the temperature sensors are input,

wherein the control device detects reverse of the  
5 discharge refrigerant pressures of the first and second compression elements based on the discharge refrigerant temperatures of the first and second compression elements.

7. The refrigerant cycle apparatus according to  
10 claim 6, wherein the control device judges that the discharge refrigerant pressures of the first and second compression elements are reversed in a case where the discharge refrigerant temperature of the first compression element is higher than that of the second compression  
15 element.

8. The refrigerant cycle apparatus according to claim 1, 2, 3, 4, 5, 6, or 7, wherein the control device reduces a valve opening of an expansion valve constituting  
20 the refrigerant circuit in a case where it is judged that the discharge refrigerant pressures of the first and second compression elements are reversed.

9. The refrigerant cycle apparatus according to  
25 claim 1, 2, 3, 4, 5, 6, 7, or 8, wherein the control device lowers the number of revolutions of the electromotive element in a case where it is judged that the discharge

refrigerant pressures of the first and second compression elements are reversed.

10. The refrigerant cycle apparatus according to  
5 claim 1, 2, 3, 4, 5, 6, 7, 8, or 9, wherein carbon dioxide  
is used as a refrigerant sealed in the refrigerant circuit.